

**WHAT IS CLAIMED IS:**

1. A feedback controlled tension applying system, comprising:
  - 5 a material processing device that processes a material in continuous sheet form while applying a tension to the material;
  - a tension applying device that applies the tension to the material;
  - 10 a measuring means for measuring a moving length amount per predetermined time of the material; and
  - a control device that feedback-controls said tension applying device based on a measurement result of said measuring means so that the moving length
  - 15 amount per predetermined time of the material becomes a set value that is set in advance.
2. The feedback controlled tension applying system according to claim 1,
  - 20 wherein said measuring means comprises:  - a measuring roll that rotates in contact with the material; and
  - 25 an encoder that detects an amount regarding a rotation angle of said measuring roll, and
  - wherein said measuring means measures the moving length amount per predetermined time of the material based on the amount regarding the
  - 30 rotation angle of said measuring roll detected by said encoder.
3. The feedback controlled tension applying system according to claim

1,

wherein said tension applying device comprises:

5 a base;

an arm having one and other end portions thereof, the one end portion of said arm being fixed to said base so as to be swingable in upward and downward directions and the other end portion of said arm being provided  
10 with a pulley that applies a load on the material; and

a balance weight that moves on said arm in one and other directions along said arm by control of said control device.

15 4. The feedback controlled tension applying system according to claim 2,

wherein said tension applying device comprises:

20 a base;

an arm having one and other portions thereof, the one end portion of said arm being fixed to said base so as to be swingable in upward and downward directions and the other end portion of said arm being provided with a pulley  
25 that applies a load on the material; and

a balance weight that moves on said arm in one and other directions along said arm by control of said control device.

30 5. The feedback controlled tension applying system according to claim 1,

wherein said material processing device performs processing in a longitudinal direction of the material.

- 5           6.       The feedback controlled tension applying system according to claim 2,

wherein said material processing device performs processing in a longitudinal direction of the material.

- 10       7.       The feedback controlled tension applying system according to claim 3,

wherein said material processing device performs processing in a longitudinal direction of the material.

- 15       8.       The feedback controlled tension applying system according to claim 4,

20       wherein said material processing device performs processing in a longitudinal direction of the material.